To the members of the commission:

In the matter of FCC proceeding 99-325 regarding digital broadcasting in the medium wave band I would like to offer these comments.

IBOC was originally a strategy conceived over 10 years ago when broadcast rules and public policy were considerably different than today. It was originally intended to stay within the spectral mask of the licensed analog channel. It has taken a decade to get a workable system that approaches this goal. Meanwhile the face of broadcasting has completely changed. Broadcaster's goals are very different and for the most part are oriented toward group operation. At the same time changes in public policy has brought about the requirement that the Commission produce revenue through the auctioning of radio frequency spectrum.

IBOC as proposed on AM channels accomplishes little toward any of those ends. We have only to look to AM stereo to see that neither consumers nor manufacturers have much interest in improved audio quality only. There are many other technical issues that need to be solved.

The biggest problem faced by many AM operators is interference free reception and their ability to penetrate into what is becoming a more hostile electronic environment every day. Locating AM transmitter sites is becoming increasingly difficult as well. The proposed system does not offer the additional tools to solve these issues.

Another technology, which has many more hours of real world testing as well as peer reviewed laboratory testing, is also available. It is known as the Radio Mondiale initiative that the Commission has already permitted to be tested on US short-wave broadcast stations. Station WEWN in Birmingham Alabama broadcast a test program received in LasVegas Nevada during the recent NAB convention. It is similar in concept to Ibiquity's offering but offers these additional benefits –

> The ability to establish single frequency networks, a broadcaster could build a number of lower power transmitters and more effectively serve a licensed area than from a central point. With technical standards different than for central analog stations, antennas that are greatly reduced in size (and efficiency) could be employed. Broadcaster might produce substantial one time profit by selling valuable AM transmitter site land and deploying a more effective network of low power synchronous stations
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> Mondiale has scaleable bandwidth from under 8 kHz occupied channel to 20 kilohertz. It also has various levels coding to permit an exchange of quality for robust performance. This means a station can trade weak signal performance against quality based on program content or time of day if is so desired.

It has been demonstrated to have superior performance over analog when conditions are very poor. Unlike the present Ibiquity concept that requires a blend to analog, Mondiale performance under adverse conditions is superior to analog and requires no blend. This means that during transition, stations will not have to delay their analog signal and therefore require additional part 74 facilities in order to provide IFB capability to replace real time off air reception.

The interference characteristics of Mondiale are well documented and are an established standard by the ITU(ITU-R BS.1514**).** The crucial point is not to favor one digital technology over another but to set a standard that assures continued compatibility world wide of receivers and offers broadcasters additional new tools and the Commission a potential new revenue source. A number of prominent US manufacturers are a part of this initiative

Rather than taking a narrow look that reflects what existed 10 years ago I would respectfully submit an alternative that the Commission permit digital broadcasting independent of the analog facility but licensed in accordance of either the ITU protection standards or some very similar FCC variation of it. This will make implementation easier for many broadcasters, especially those with directional antennas that will not properly deliver an Ibiquity signal. By only meeting interference requirements, a broadcaster might opt for a lower power digital signal that may not require the same directional pattern.

Recognizing that some may prefer Ibiquity's approach the Commission should only require that all receivers built be compatible with both approaches. This is especially important, as Mondiale broadcasting has already begun on a worldwide basis. An incompatible receiver would mean a receiver capable of domestic digital medium wave could not even receive short-wave broadcasts without going into a completely different standard. In fact on January 24th 2000, Ibiquity, (then USADR) and DRM issued a joint press release promising a single worldwide digital standard. It is hoped the Commission would insist on this compatibility.

As to the issue of available spectrum, many options are available. First is the option of operation on half adjacent channels. Since any of the proposed digital systems use a large number of multiple carriers, interference exists as noise not a heterodyne. ITU protection standards for digital into analog interference address this. An analog AM station could operate in VSB mode where one analog sideband extended only 2 kilohertz and the other provided the desired full analog quality. In the space gained an 8kilohertzn wide digital signal could exist, later the digital signal could be widened to 10 or 20 kilohertz and occupy the full previously analog spectrum. The digital signal would operate at a power that protected other stations and that was most technically viable for the digital broadcaster. Since a new receiver is required in any event, the commission could look to other frequencies, such as those below the broadcast band that are becoming less usable for their present purpose. This would provide the opportunity to both offer this new spectrum in auction and allow stations to co exist during a transition period with the

services now being phased out. Another possibility is that these frequencies be temporarily used as a transition frequency with one channel or the other being returned after fixed transition time. This would be identical to the present HDTV policy. Spectrum above the existing expanded band might also be considered. Presently in the UK there is move to use DRM technology on 26 MHZ for local radio, providing an excellent complement to the LPFM concept.

To realize the concepts suggested in the comments, the Commission need only to adopt ITU-R BS.1514 and permit compatible digital broadcasting technology on a secondary non-interfering basis on the existing AM bands. The Commission could easily go a step further and authorize the technology on a secondary non-interfering basis on many frequencies between 100 and 1800 kilohertz, transitioning to a more permanent primary status later as older systems in those bands are fully decommissioned. Separately, other frequencies not friendly to most other modern digital technology could be investigated. The important issue is that before receivers are manufactured in large quantity, the manufacturers include the necessary frequency range in their designs.

Later steps would then be taken to produce a more complete set of technical rules for digital stations that would permit them to take the best advantage of the new technology. Permitting short inefficient radiators for on channel boosters would be but one of a number of enlightened steps that could be taken.

If the Commission were to act in this matter in as suggested above the following benefits would accrue:

Better service for the consumer. A world standard radio that, due to volume, would cost less than a US only device would be possible. Greatly improved service would be also there would not be the mandatory use of a proprietary technology, which is, another layer of additional costs.

For the broadcaster, potentially lower transition costs and much better service options. Ultimately, with successful deployment of this digital service, many AM stations will greatly increase in value.

Ibiquity could continue to offer and deploy its offering, provided receivers were compatible with the “world standard” They may choose to further modify their system and thereby increase marketing opportunities worldwide.

For the Government, simplified regulation and a possible source of new spectrum revenue.

Respectfully submitted

Robert Meuser
New York, NY